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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/331,189	11/29/1999	HEINRICH ULRICH	016790/0376	1362

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EXAMINER
NGUYEN, THONG Q

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 08/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/331,189	Applicant(s) ULRICH ET AL.	
	Examiner Thong Q. Nguyen	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-22,25-35 and 39-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-22,25-35 and 39-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *22* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. The present Office action is made in response to the amendment (Paper No. 23) filed on 5/22/2002.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature concerning the axially movement of the objective or the objective turret for photographing of z-sections in a desired directional orientation as recited in claims 27, 28, 39 and 40 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The lengthy specification which was amended by the amendments has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The specification is objected to because it does not contain headlines such as the Summary of the invention, the Brief Description of the drawings, etc... for the

purpose of providing a clear framework of the application. Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). The Office accepted "Microfiche Appendices" until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim R j ctions - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 41-42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a) Claim 41 is rejected under 35 USC 112, second paragraph because it is unclear how the microscope with an ocular, a tube lens, an objective lens, and an image rotator disposed between the tube lens and the objective lens can measure an object from a plurality of angular positions without the physical rotation of the object. While the specification refers to the use of a prism or a set of mirrors arranged in a specific manner, i.e., K-configuration, for optically rotating the image of an object ; however, the specification has never taught or disclosed sufficient information/description concerning the measurement of the object at different angles without the rotation of the object.

b) Claim 42 is rejected for the similar reasons as set forth in element a) above.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 27-28 and 39-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 27 is rejected under 35 USC 112, second paragraph because the feature thereof "an axially movable objective is provided for the photographing of

z-sections in a desired directional orientation" (lines 2-4) is indefinite. What does applicant mean by "z-sections in a desired directional orientation" (lines 3-4)? Further, the mentioned feature is confusing with the structure of the movable objective as recited in the feature thereof "an axially movable objective" (lines 2-3). Applicant should note that a movement of an objective in an axial direction means that the objective is movable along the light path or the axis of the objective. In that aspect then how can the ***axially movable objective can take photograph of the so-called "z-sections" in a desired direction orientation***? (Examiner's emphasis)

b) Each of claims 28, 39 and 40 is rejected for the similar reason as set forth in element a) above.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 29-31 and 41, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshinaga et al (U.S. Patent No. 4,832,474).

Yoshinaga et al disclose a microscope for examining a wafer. The microscope as described in columns 3-4 and shown in figs. 4 and 6 comprises a microscope objective (8) and an ocular (30), a tube lens (28) and a rotatable optical system (33) in the form of a Dove prism for rotating an image wherein the rotatable

optical system is located in the optical path of the microscope between the objective (8) and the tube lens (28). With regard to the feature concerning the "confocal" as recited in the preamble of the claim 29, such a recitation is not given a patentable weight because all of the features recited after the term "comprising" do not provide any specific/limitations for the term "confocal" recited in the preamble of the claim.

11. Claims 16-18, 25-26 and 42, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al (U.S. Patent No. 4,650,335).

Ito et al disclose a scanning microscope. The microscope as described in columns 2-3 and shown in fig. 1 comprises an observation tube having an ocular, a laser scanner having a scanning mirror 93), a scanning lens (8), and an image rotating system in the form of a Dove prism (6) wherein the image rotating system is located between the scanning mirror (3) and the scanning lens (8). It is also noted that the system comprises an objective (10) for focusing light into the sample (13) and for guiding light from the sample to a detecting system having a CCD. The use of a thick beam splitter can be seen in the element (5) disposed between the image rotating system and the lens (4).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinaga et al in view of Washmen et al (U.S. Patent No. 4,181,436, of record).

The microscope with a rotatable optical system in the form of a rotatable prism as provided by Yoshinaga et al meets all of the limitations of the device claimed in present claim 32, except the type of the prism being used in the rotatable image system. However, the use of an optical system having an Abbe prism for rotating an image in a microscope is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present specification in which applicant has admitted that a Dove prism can be used in the image rotation system. Further, the use of an image rotation system having a Dove prism is indeed claimed as can be seen in the present claim 31. It is also noted that the use of an image rotation system having an Abbe prism is clearly suggested to one skilled in the art as can be seen in the microscope provided by Wasmund et al. See column 4 and fig. 5a. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art at the time the invention was made to utilize any suitable kind of prisms including the Abbe prism as suggested by Wasmund et al in an image rotating system of Yoshinaga to satisfy a particular design/application.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al in view of Wasmund et al (U.S. Patent No. 4,181,436, of record).

The microscope with a rotatable optical system in the form of a rotatable prism as provided by Ito et al meets all of the limitations of the device claimed in present

claim 19, except the type of the prism being used in the rotatable image system. However, the use of an optical system having an Abbe prism for rotating an image in a microscope is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present specification in which applicant has admitted that a Dove prism can be used in the image rotation system. Further, the use of an image rotation system having a Dove prism is indeed claimed as can be seen in the present claim 18. It is also noted that the use of an image rotation system having an Abbe prism is clearly suggested to one skilled in the art as can be seen in the microscope provided by Wasmund et al. See column 4 and fig. 5a. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art at the time the invention was made to utilize any suitable kind of prisms including the Abbe prism as suggested by Wasmund et al in an image rotating system of Ito et al to satisfy a particular design/application.

15. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinaga et al (U.S. Patent No. 4,832,474) in view of the Japanese reference No. 8-334698.

The microscope with a rotatable optical system in the form of a rotatable prism as provided by Yoshinaga et al meets all of the limitations of the device claimed in present claims 33-35, except the type of optical elements used in the image rotating system. In other words, while Yoshinaga et al suggest the use of a Dove prism in the image rotating system, they do not suggest the use of a set of

mirrors as claimed. However, the use of an image rotating optical system having an odd number of mirrors arranged in a K-configuration for the purpose of rotating an image as claimed is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present specification in which applicant has admitted that a Dove or Abbe prism can be used in the image rotation system. Further, the use of an image rotation system having a (Dove/Abbe) prism is indeed claimed as can be seen in the present claims 30-31. It is also noted that the use of an image rotation system an image rotating optical system having an odd number of mirrors arranged in a K-configuration for the purpose of rotating an image is clearly suggested to one skilled in the art as can be seen in the microscope described in the Japanese reference '698. See pages 2-3 and figs. 1 and 2. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yoshinaga et al by utilizing any suitable kind of optical system including a odd number of mirrors arranged in a K-configuration as suggested by the Japanese reference '698 as an image rotating system to satisfy a particular design/application.

16. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (U.S. Patent No. 4,650,335) in view of the Japanese reference No. 8-334698.

The microscope with a rotatable optical system in the form of a rotatable prism as provided by Ito et al meets all of the limitations of the device claimed in present claims 20-22, except the type of optical elements used in the image rotating

system. In other words, while Ito et al suggest the use of a Dove prism in the image rotating system, they do not suggest the use of a set of mirrors as claimed. However, the use of an image rotating optical system having an odd number of mirrors arranged in a K-configuration for the purpose of rotating an image as claimed is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present specification in which applicant has admitted that a Dove or Abbe prism can be used in the image rotation system. Further, the use of an image rotation system having a (Dove/Abbe) prism is indeed claimed as can be seen in the present claims 17-19. It is also noted that the use of an image rotation system an image rotating optical system having an odd number of mirrors arranged in a K-configuration for the purpose of rotating an image is clearly suggested to one skilled in the art as can be seen in the microscope described in the Japanese reference '698. See pages 2-3 and figs. 1 and 2. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope of Ito et al by utilizing any suitable kind of optical system including a odd number of mirrors arranged in a K-configuration as suggested by the Japanese reference '698 as an image rotating system to satisfy a particular design/application.

17. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinaga et al (U.S. Patent No. 4,832,474) in view of Hasegawa (U.S. Patent No. 5,270,855).

The microscope having an image rotating system as provided by Yoshinaga et al described in the paragraph 10) above meets all of the limitations of the device as claimed in present claims 39 and 40 except the feature that the objective or the turret supporting objective can move in an axial manner for the purpose of photographing the so-called "z-sections". However, the use of a mechanism for moving a turret supporting a plurality of objectives in an axial direction is clearly known to one skilled in the art as can be seen in the microscope provided by Hasegawa. See columns 5-6 and figs. 4 and 7, for example. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yoshinaga et al by moving the objective or a turret supporting plural objectives in an axial direction as suggested by Hasegawa for the purpose of adjusting focus or for viewing/illuminating an object in its depth dimension.

18. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (U.S. Patent No. 4,650,335) in view of Hasegawa (U.S. Patent No. 5,270,855).

The microscope having an image rotating system as provided by Ito et al described in the paragraph 11) above meets all of the limitations of the device as claimed in present claims 27 and 28 except the feature that the objective or the turret supporting objective can move in an axial manner for the purpose of photographing the so-called "z-sections". However, the use of a mechanism for moving a turret supporting a plurality of objectives in an axial direction is clearly

known to one skilled in the art as can be seen in the microscope provided by Hasegawa. See columns 5-6 and figs. 4 and 7, for example. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Ito et al by moving the objective or a turret supporting plural objectives in an axial direction as suggested by Hasegawa for the purpose of adjusting focus or for viewing/illuminating an object in its depth dimension.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

20. The additional references are cited as of interest in that each discloses the use of an image rotating system in a microscope. It is also noted that the system descried in the U.S. Patent No. 6,072,625 and the Japanese reference No. 10-48527 is similar to the device as claimed in the present application; however, each of the mentioned references does not have effective date earlier than that of the present application.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (703) 308-4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Thong Q. Nguyen
Primary Examiner
Art Unit 2872

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August 8, 2002